

SOCIETY MEETING OF FEBRUARY 23, 1994**APTERYGOTA AND SYMPHYLA****Robert T. Allen**

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The "Apterygota" orders remain a mystery for most entomologists. These organisms are usually ignored, or only briefly covered in introductory classification courses. They are usually minute and cryptic in the soil, and therefore rarely noticed in the field. In fact, there has been a long-running debate whether some of these groups are truly insects, with major reference works, like *The Insects of Australia* (2nd ed.) coming down firmly on the side of excluding the Protura, Collembola and Diplura from the Class Insecta. So it was with great interest that the Society membership heard more about these enigmatic organisms and the Symphyla from a wonderful, entertaining speaker, Dr. R. Tommy Allen.

How does one embark on a career studying these groups? Like most of us studying a particular group, Dr. Allen's interest was a mixture of chance, curiosity and the realization that these organisms could provide answers to broad questions in biology. In fact, Allen's study of these groups the past few years is a great departure from his previous 25 years studying carabid systematics. Starting with a donated collection of Protura from Dr. T. Copeland, Dr. Allen has augmented it with his own fieldwork in diverse places around the world, including a recent trip to Chile. Although Berlese funnels are best for Collembola and Protura, hand collecting is best for Diplura and involves rolling rocks along stream banks, examining rotten logs, and, in arid areas in Chile, digging in soil up to a meter deep. Specimens can be studied by the usual means from slide mounts, but also by newer methods such as scanning electron microscopy, video imaging and molecular techniques. For example, he illustrated the multitude of morphological characters by SEM photographs, the behavior of a campodeid dipluran by a 30 minute video and mentioned his molecular sequencing collaboration with Ward Wheeler of the American Museum of Natural History.

Although the number of described species in these groups is small, Allen believes that the number of undescribed species is great, with, for example, only one-tenth of the Protura (~400 spp.), and one-half of the Diplura (~1000 spp.) known presently. And although the groups are nearly cosmopolitan, they do exhibit interesting biogeographic patterns which Allen surmises might be a reflection of some of the Earth's early history. In pursuit of these questions, he has derived a phylogeny for the families of Diplura, with some families and subfamilies showing intriguing restricted distributions in places like Tonga. Within the Japygidae, many genera have restricted geographic distributions and absences, while the Campodeidae genera are mostly widely distributed. Questions regarding the historical biogeography of these apparently low-dispersing organisms and the apparent lack of speciation in the face of long isolation (as particularly exemplified in the Symphyla) are important ones that Allen hopes to answer in his future work.

The meeting also included several notes of entomological interest. Paul Schaefer mentioned his research into the "tussocks" or hair groupings of tussock moth caterpillars (Lepidoptera: Lymantriidae) including gypsy moths. He found a gland located under each tussock and suggests that the long hairs may act as a brush to carry the secretion away from the caterpillar. Field Day is set for October 1 this year at Fair Hill, Maryland. Sue Frank displayed a clock incorporating cicada wings which was made by a local artisan. About 22 members and their guests attended the meeting.

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